

**Experience and Technology at
the service of the Industry**



Jan, 2016

- **GD Energy Services Group**
- Services
- R&D

Introduction

General Information

GDES is a family owned Group with international presence, offering a wide scope of services within the following domains:

- **Industrial maintenance**
- **Surface treatment and special coatings**
- **Renewable energy services**
- **Chemical cleaning**
- **Emergencies**

GDES serves a wide range of industrial sectors, most notably:

- Electricity generation:
 - Nuclear
 - Conventional
 - Renewable
- Petrochemical
- Aeronautical
- Shipbuilding

Key facts

- Year of foundation: **1932**
- Number of employees: **1600**
- Engineers: **220**
- *Aggregated revenues 2014: € **104** millions
Of which, 70% within nuclear industry*



United Kingdom

Regus House, Central Bd
Blythe Valley Business Park
Solihull, West Midlands
B90 8AG
Tel: +44 (0) 1564 711 675

Spain

Av. Cortes Valencianas 58
Sorolla Center, Local 10
46015, Valencia (España)
Tel: +34 963 540 300

www.gdes.com

Some of our clients



- GD Energy Services Group
- **Services: Nuclear**
- R&D



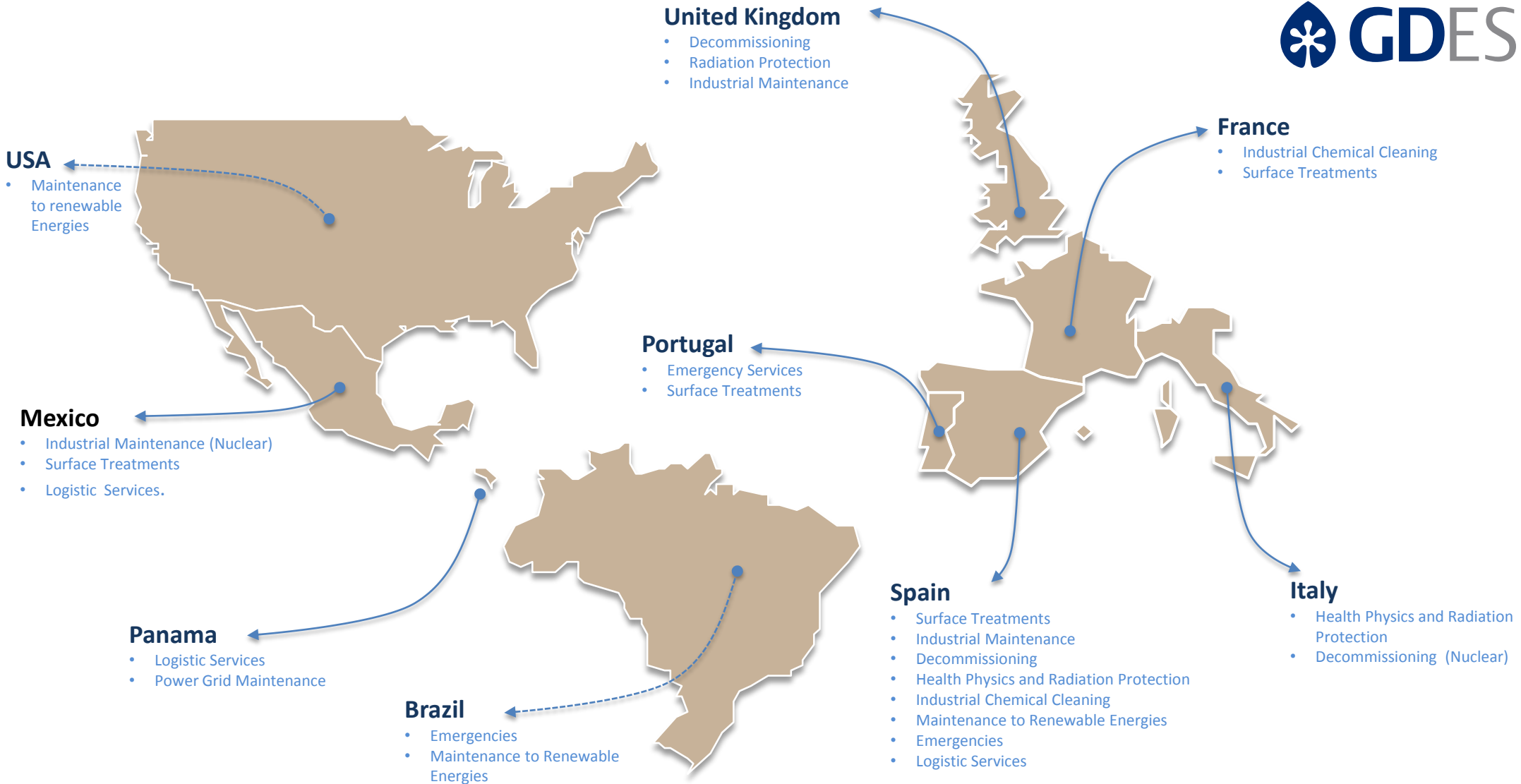
Support to O&M

- Decontamination
- Radiological Protection
- Support services during outages
- Training and technical advice
- Chemical cleaning
- Environmental emergencies

Dismantling and Decommissioning

- Technical studies
- Risk assessments
- Radiological assessments and Radiological protection
- Waste characterization and segregation
- Decontamination
- Disposal
- Design of ventilation systems





- GD Energy Services Group
- Services: Nuclear
- **R&D**

Areas of R&D

Development of technology to support the operation and maintenance of energy plants, with the aim of increasing efficiency, optimising operating costs and minimising waste.

Nuclear industry

Automation of processes to reduce dose rate in decontamination and dismantling tasks.

Development of new procedures/processes/equipment for decontamination and waste management.

New applications of special coatings and paints in singular works.

Emergencies

Optimisation of radiological emergency response resources.

Emergency management and response support systems for industry and fire fighters.

Radiological Protection

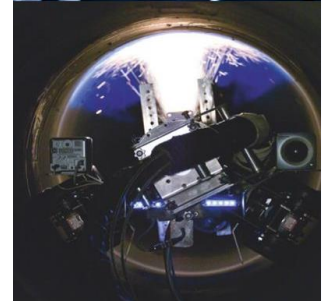
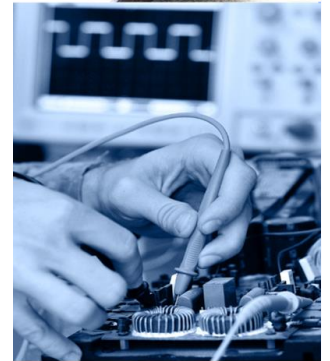
New systems for personal dosimetry control.

New technologies for the monitoring and minimisation of radiological impact.

Renewable Energy Sources

Development of equipment for thermal solar plant maintenance.

On-site maintenance and remote inspection of wind energy generator blades.



INNOVATION CENTER + TITANIA (SPIN-OFF UPV)



Chemical engineering laboratory



Robotics and control process laboratory.



Design and development laboratory



75% GDES-25% UPV



Showroom



Research and development

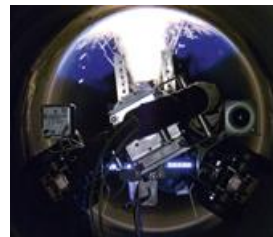
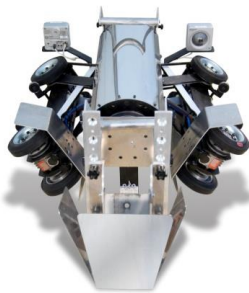
PACCO - Preventive Acid Chemical Cleaning Operation

- Development of a chemical cleaning procedure that significantly reduce the magnetite obstruction in steam generators (PWR NPP).
- **Operational Experience:** Dampierre NPP, EDF.



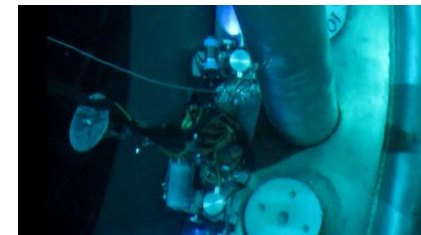
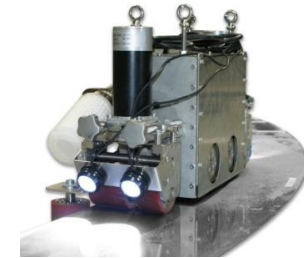
TIRANT[®] System.

- Automated system for the regeneration of the interior surfaces of pipes by means of arc spray.
- **Operational Experience:** Automatic metalization of cross-under pipes (Iberdrola-CN Laguna Verde).



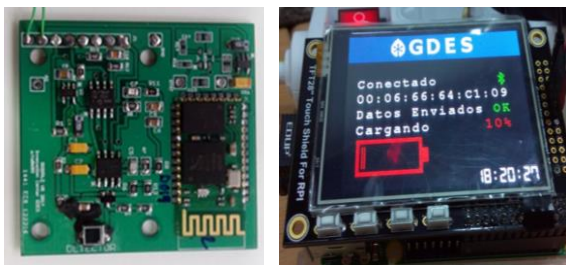
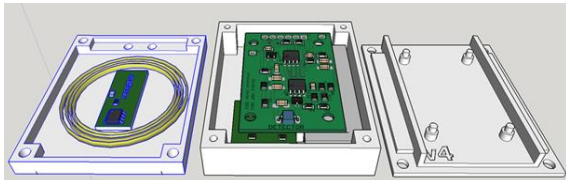
TrackRing

- Automatic system for cleaning the reactor vessel flange.
- **Operational Experience:** Trillo NPP.



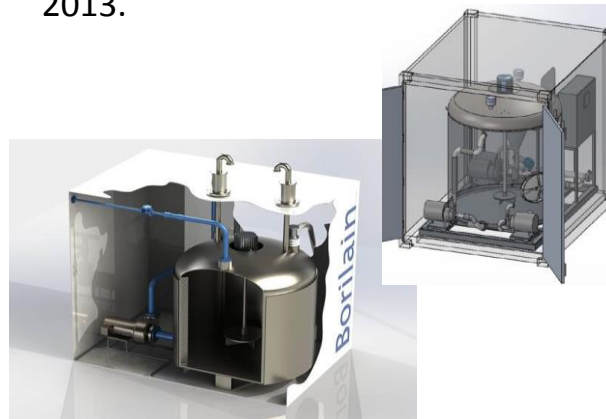
WIFI Dosimetry

- Development of an autonomous electronic personal dosimeter at a low cost for sanitary and industrial use.
- Development of specialised software to manage the dosimeter information.
- **Operational Experience:** Project in progress.



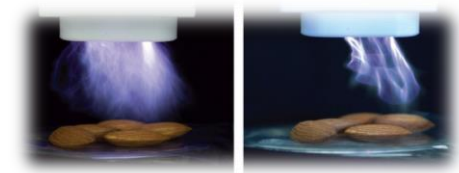
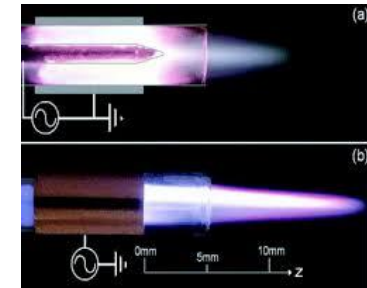
BORILAIN

- Mobile device for the automatic and continuous supply of the Standby Liquid Control (SLC) system in a NPP. The device would operate in emergencies for at least 30 days.
- **Status:** Design finished in July 2013. Design approved by EDF in december 2013.



QUIXOTE

- Study, design and construction of two prototypes for chemical&biological decontamination by means of cold plasma. Project financed by the European Defense Agency.
- **Operational Experience:** Project in progress.



OFF GAS

- Online and real time system for early detection of fuel and control rod failures.
- Development in collaboration with Cofrentes NPP.
- **Operational Experience:** Project in progress.



DEMOS PLUS

- Equipment developed for the mechanical cleaning of both the base and the walls of the reactor cavity. It is remotely controlled.
- In combination with a filtering system, after the scrubbing, the detached particles are filtered and disposed.
- **Operational Experience:** Trillo NPP, Cofrentes NPP

